PRESIDENT'S MALARIA INITIATIVE

Malaria Country Action Plan (CAP)
FY 2006
TANZANIA

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US PMI Planning Team Strategy Report
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A. PRESIDENT'S MALARIA INITIATIVE

The new President's Malaria Initiative (PMI) seeks to "*dramatically reduce malaria as a major killer of children in sub-Saharan Africa.*[1]" The goal is to reduce malaria deaths by 50 percent in targeted countries in sub-Saharan Africa. Approximately 85 percent coverage of vulnerable or high risk groups with preventive and curative actions will be necessary to achieve the goal. The main actions the initiative will support are: promotion of insecticide-treated nets (ITNs), indoor residual spraying (IRS), prompt and effective case management of malaria and intermittent preventive treatment (IPT) of malaria in pregnancy.

A total of United States Dollars (USD) $1.2 billion will be made available to up to 15 sub-Saharan African countries over the next five years (Fiscal Years FY 2006 – FY 2011). These resources are in addition to the USD $200 million the United States Government (USG) already spends on malaria. The total beneficiary population is approximately 175 million people.

In Tanzania, PMI has been enthusiastically received by the National Malaria Control Programme (NMCP) in the mainland and the Zanzibar Malaria Control Programme (ZMCP) in Zanzibar. Both programs have been extensively consulted and have actively participated in discussions with the PMI team in setting programmatic priorities. A rapid assessment (RA) of the malaria situation in mainland Tanzania and Zanzibar was completed by the United States Agency for International Development (USAID), the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO). Additionally, consultative meetings were held in the mainland and Zanzibar to further consult with government, development partners (including NGOs) and the private sector. We believe the Country Action Plan (CAP) faithfully captures the top technical, programmatic and financial priorities voiced by government and the development community in Tanzania as well as observing the letter and spirit of the PMI. This work plan has been approved by the NMCP, ZMCP and USAID – Tanzania.

B. MALARIA SITUATION

Malaria is the single most important cause of morbidity and mortality in the United Republic of Tanzania. Ninety three percent of the population is considered at risk.. Malaria is perennial in 106

[1] http://www.whitehouse.gov/news/releases/2005/06/print/20050630-8.html

districts (out of 126) of the country and will affect one way or another 100 percent of the population. Additionally, 20 districts, which represent about 25 percent of the population, are prone to malaria epidemics every four to five years. Approximately 95 percent of cases of malaria are produced by *Plasmodium falciparum.* Estimates for overall number of cases of malaria are between 14 – 19 million cases per year. Malaria affects all socio-economic strata but it concentrates mainly among the poor and children under five. It seriously affects pregnant women. Malaria peaks during the "short rains" (November-December) and "long rains" (March – June) and declines during the dry season (July – October).

A third or more of all out patient department (OPD) visits and hospital admissions are attributed to malaria.[2] In year 2000, there were 1,661,533 OPD consultations for malaria for children under five—almost 39 percent of total consults for children under five. Additionally, almost 55 percent of hospital admissions in children under five were due to complicated malaria. Overall (all ages) there are 100,000 – 125,000 deaths per year from malaria, of which 80 thousand occur in children under five—that is 65 – 80 percent of all malaria deaths and 36 percent of all under five deaths. Nationally, it is estimated that a Tanzanian child under five years of age will have .7 cases of malaria per year.[3]

Malaria is also a significant burden to pregnant women in Tanzania. It has been estimated that there are approximately 1.7 million cases of malaria in pregnant women and up to 20 percent of deaths among pregnant women can be attributed to malaria. Also, a significant proportion of anemia during pregnancy is related to malaria.

Below are the main roll back malaria indicators monitored by the National Malaria Control Programme in mainland and the Zanzibar Malaria Control Programme.

Table 1: Roll Back Malaria Core Indicators

#	Indicators	NMCP		ZMCP	
		2001	2003	2002	2005
1	Crude death rate (under five)	184 /1000			
2	Mortality attributed to malaria (all ages)	31	32	50	36
3	Mortality attributed to malaria (under five)	38	41	47	47
4	Mortality attributed to malaria (5 and above)	23	10	62	25
5	Morbidity attributed to malaria (all ages)	42	40	48	22
6	Morbidity attributed to malaria (under five)	46	43	54	26
7	Morbidity attributed to malaria (5 and above)	41	38	44	20
8	Case fatality rate (under five)	2.8	3.2	2.8	2.5
9	Case fatality rate (five and above)	3.5	3.1	2.7	2.3
10	% of under fives with fever getting appropriate treatment within 24 hours of onset	11	27	6	10
11	% of fever/uncomplicated malaria under five cases correctly managed at health facilities	51	64	41	73

[2] The Costs, Effects, and Cost-Effectiveness of Changing the First-Line Drug for the Treatment of Malaria in Tanzania.
[3] Personal communication. Joanna Armstrong Schellenberg.

Table 1: Roll Back Malaria Core Indicators

#	Indicators	NMCP		ZMCP	
		2001	2003	2002	2005
12	% of severe malaria cases (under-five) correctly managed at health facilities	54	58	73	69
13	Proportion of inpatients cases due to malaria all ages	46	40		
14	Proportion of inpatients cases due to malaria under five	51	56		
15	Proportion of inpatients cases due to malaria five and above	41	25		
16	Proportion of admissions due to malaria	59	55		
17	% pregnant women taking SP for IPT	29	49	0	49
18	% pregnant women sleeping under treated mosquito net	8	21	3	38
19	Proportion of pregnant women sleeping under mosquito net during current pregnancy or during 6 months of last pregnancy	36	42		
20	% of under fives sleeping under treated mosquito net.	15	26	0	37
21	% of under fives sleeping under mosquito net	46	52	34	68
22	% of mosquito nets treated with insecticide within the last 12 months	33	49		
23	% of households having at least one ITN	14	25	3	41
24	Proportion of population sleeping under mosquito nets	40	39		

Source: NMCP – Monitoring Malaria Situation and Control Activities – Health Facility and Community Survey. Monitoring and Evaluation Unit 2001 – 2003. ZCMP – Roll back Malaria Evaluation Report 2005.

C. NATIONAL AND ZANZIBAR MALARIA CONTROL PROGRAMMES

The Government of Tanzania (GoT) has well established malaria control programs in the mainland and Zanzibar. The National Malaria Control Programme (NMCP) serves the mainland while the Zanzibar Malaria Control Programme (ZMCP) serves Zanzibar. Mainland Tanzania and Zanzibar (which includes the islands of Unguja and Pemba) have separate ministries of health and for practical purposes their respective programs are independent and may, in some areas, differ somewhat. Essentially, for malaria control purposes, there are two "countries" within the United Republic of Tanzania; the mainland with approximately 34 million inhabitants and Zanzibar with one million population. Therefore, strategies and work plans will discuss each country separately when appropriate.

For the NMCP, the principal aim is to reduce mortality and morbidity due to malaria in all 21 regions of the country by 25 percent by 2007 and by 50 percent by 2010. For Zanzibar the reduction is by 35 percent by 2008. Both ministries of health use similar strategies to deal with malaria, namely: appropriate management of febrile episodes in homes and health facilities (in the case of health facilities treatment is with ACT), protecting pregnant women against malaria by using Intermittent Preventive Treatment (IPT), vector control which includes encouraging populations at risk to sleep under insecticide treated nets (ITNs) and, in the case of the mainland, prompt recognition and response to epidemics. Larvicidal interventions are being carried out in the mainland while indoor residual spraying (IRS) is part of current policy both in the mainland and

Zanzibar but is not implemented in either case. Specific objectives, following the recommendations of Roll Back Malaria (RBM), have been set for all interventions by the mainland and Zanzibar malaria control programs.

Operationally these strategies involve demand creation through information, education and communication (IEC), implementation of the Integrated Management of Childhood Illness (IMCI) strategy in households and communities, training of private vendors, improved distribution of ITNs, use of a subsidized voucher system to make ITN ownership less expensive, establishment of early warning systems for malaria epidemics, and use of IPT and ITNs by pregnant women. In Zanzibar, Long Lasting Insecticidal Nets (LLIN) are distributed freely to high risk groups while in the mainland users pay a minimal fee to top off the voucher value (given to pregnant women during ante-natal visits). Current guidelines in both countries include spraying with insecticides when there is an epidemic in the mainland, while in Zanzibar, where spraying has been done before, the ZMCP wishes to re-start their IRS. Home treatment of malaria is encouraged but not overtly promoted. Most work of the NMCP and ZMCP is through direct support to districts with training and technical assistance, guidelines and, in some cases, financial support. Regions and districts in the mainland and Zanzibar are responsible for programming their own malaria activities.

To coordinate and direct actions, the NMCP and ZMCP have established various committees and task forces. In the mainland, the National Malaria Advisory Committee (NMAC) meets twice a year, at least in principle. Its purpose is to offer to the NMCP state-of-the-art technical advice on malaria control. The Inter-Agency Malaria Coordinating Committee in the mainland was set up to coordinate with RBM partners on issues of planning, monitoring and evaluation and funding. It is supposed to meet three times a year, but at this point it is not functional. For the mainland, there are four committees that deal with the various aspects of the program, namely: case management, vector control, monitoring and evaluation, and information, education and communication (IEC). ITN promotion is coordinated through the National Insecticide Treated Nets (NATNETS) Programme.

D. OVERVIEW OF EXISTING PARTNERS ACTIVITIES AND ROLES

The NMCP and ZMCP work in partnership with a variety of institutions, collaborating agencies and NGOs. Presently, partners include WHO, UNICEF, DfID, JICA, Swiss Development Cooperation, Italian Cooperation, MSF-Spain, Cooperation Ireland and USAID. Support is also received from the National Institute for Medical Research, the Ifakara Health Research and Development Center, Kilimanjaro Christian Medical Centre and Centre for Enhancement of Effective Malaria Interventions (CEEMI) financed by the Bill and Melinda Gates Foundation, and others.

From the financial point of view, the most important partner to the NMCP and ZMCP, is the Global Health Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). Once PMI comes on line, it will be the second most important source of funding. The GFATM, in rounds one and four, has granted USD $62,992,399 to the mainland for support of ITNs and purchase of ACTs. Of the total USD $27,366,184 has been disbursed to date (July 2005). Zanzibar also received grants in rounds one and four totaling USD $3,573,297 for support of ITNs and purchase of ACTs.

Table 2 below shows collaborating agencies that support the NMCP and the ZMCP and the technical interventions that are supported. Some agencies provide long term technical assistance on the ground (Italian Cooperation, CDC) while others support specific activities. Some like the World Bank provide overall budget support to the MoH so in a way they may be considered to be involved in all aspects of malaria control.

Table 2: Main Malaria Donors to NMCP and Areas of Support

Agency	Diagnostics	ACT	ITNs			IPT	IEC Other	IRS
			ITNs Cell	ITNs Purchase	ITNs IEC			
DFID			●		●			
GFATM		●	●	●	●			
JICA	●			●				
Irish Aid								
Italian Cooperation[1]	●	●	●	●	●	●	●	
Royal Dutch Embassy			●					
Swiss Cooperation			●	●	●			
USAID						●		
CDC	●	●	●			●		
World Bank	●	●	●	●	●	●	●	●
WHO	●	●	●		●	●	●	
UNICEF				●	●			

[1] The Italian Cooperation provides a full time malaria professional who works in all areas of the NMCP and ZMCP.

In addition to the above, there are several hundred non-governmental organizations (NGOs) and faith-based organizations (FBOs) working in different aspects of malaria. Many of these organizations are grouped into to two umbrella NGOs—the Tanzanian NGOs Alliance Against Malaria (TaNAAM) and the Christian Social Services Commission (CSSC). Some data suggest that a full 40 percent of primary care services are provided by NGO and FBOs.[4] In rural areas this estimate can reach 60 percent or more. Given their ubiquity and breadth of capacity, NGOs are an important partner in rolling back malaria in Tanzania.

E. OVERVIEW OF EXISTING AND RECENT ACTIVITIES AND ROLES OF US GOVERNMENT

[4] Personal communication Christian Social Services Commission

Mainland Tanzania

Since 2001 CDC - Tanzania has operated a malaria program in mainland Tanzania through a cooperative agreement with the Ifakara Health Research and Development Centre (IHRDC), operating at $1,600,000 in FY 2005. A resident epidemiologist (S. Patrick Kachur) has been seconded to IHRDC since October 2003. The focus of the program is to provide NMCP and its partners with evidence of the effect of current and potential malaria control strategies. The program includes a five year pilot evaluation of artemisinin-containing antimalarial combination treatment (ACT) for routine treatment of malaria in one district with intense malaria transmission. To date more than 700,000 doses of ACT have been delivered in Rufiji District and a multidisciplinary evaluation is providing evidence for best practices in support of rolling out this intervention nationwide. The evaluation includes direct support to demographic surveillance systems in Kilombero, Ulanga and Rufiji districts covering more than 180,000 people and representing the single largest population under continuous demographic surveillance in sub-Saharan Africa. In FY2005 CDC contributed an additional $200,000 to adapt Demographic Surveillance Systems (DSS) to better evaluate maternal and perinatal mortality. CDC operates 3 sentinel sites assessing the efficacy of antimalarial treatment and has funded a longitudinal cohort evaluation of alternative ACT regimens. A pilot introduction of rapid diagnostic tests for malaria in rural health facilities is also underway. CDC also supports an evaluation of malaria prevention strategies for pregnant women through alternative regimens for intermittent preventive treatment (IPT). In FY 2005 the agency awarded $180,000 to the JHPIEGO/ ACCESS project to support enhanced delivery of malaria prevention in pregnancy through focused antenatal care. More recently, the agency, along with NMCP and IHRDC, has established a consortium of partners including Tanzania Food and Drug Authority, Medical Stores Department, Management Sciences for Health, Novartis Foundation for Sustainable Development which will evaluate alternatives for effective delivery of ACT through accredited drug dispensing outlets (ADDOs). The CDC resident epidemiologist provides technical assistance to the Tanzania National Voucher Scheme (NVS) through its consultative group and steering committee and serves on the NMCPs advisory committee for malaria treatment. CDC is currently assisting NIMR and UNICEF with an evaluation of an ITN distribution campaign targeting children under 5 in Lindi Region.

CDC provides technical support for the MOH's Integrated Disease Surveillance and Response (IDSR) program which records facility-based cause-specific morbidity data useful for tracking diseases of epidemic potential (including malaria in epidemic-prone settings). This support is coordinated through the WHO Regional Office for Africa. CDC Tanzania also supports MoH and the National Institute for Medical Research as well as a broad range of faith-based and nongovernmental organizations through the US President's Emergency Plan for AIDS Relief (PEPFAR). This includes comprehensive support for HIV surveillance, care and treatment, prevention of mother to child transmission, blood safety and prevention.

USAID/Tanzania's implementing partners include the ACCESS project, managed by JHPIEGO and focused on malaria in pregnancy, the T-Mark project managed by Academy for Educational Development (AED) focused on social marketing and communications, the DELIVER project managed by John Snow International (JSI) which is focused on a malaria program advisor (Dr. R. Salgado) and drug management and logistics systems, and the Ministry of Health via the Zonal Training Centers in Arusha and Iringa regions. USAID/Tanzania's malaria portfolio for FY2005 includes activities in Focused Ante-Natal Care (FANC) which includes IPT, Communications, collaborative support for the Malaria/IMCI District Focal Persons training program of the MOH

via the Center for the Enhancement of Effective Malaria Interventions, as well as support for improved drug management and logistics capacity.

Zanzibar

CDC Tanzania has provided technical guidance to ZMCP in developing interventions to support the roll out of ACT on the islands in 2003. It also supported a baseline survey in sentinel communities prior to the introduction of the new therapy.

F. GOAL AND TARGETS OF THE PRESIDENT'S MALARIA INITIATIVE (*by 2011*)

By the end of the project, partners will reduce malaria-related mortality in mainland Tanzania and Zanzibar by 50% when compared with pre-PMI levels. After three years of full implementation (in 2011), the PMI will provide resources to assist each country to accelerate the attainment of the following targets in populations at risk for malaria. Currently, 93% of the population is considered at-risk for malaria, including about 25% who are at risk for epidemic malaria.

Targets apply for both the mainland and Zanzibar, except where noted.

- 85% of children under five will have slept under an ITN the previous night;
- 85% of pregnant women will have slept under an ITN the previous night;
- 85% of pregnant women will have received two or more doses of IPT during their pregnancy;
- 85% of houses targeted for IRS will have been sprayed in Zanzibar and the mainland;
- 85% of children under five with suspected malaria have received treatment with an antimalarial drug in accordance with national malaria treatment policies within 24 hours of the onset of their symptoms.

G. MONITORING AND EVALUATION PLAN

The Ministry of Health recently revised its facility-based national Health Management Information System (HMIS). It is a relatively bulky system that— aside from overall utilization figures--provides little information useful to the National Malaria Control Programme. Instead NMCP (mainland) and ZMCP conduct health facility and community surveys, roughly every 2 years. These surveys are used to track indicators developed by the Roll Back Malaria partnership and include coverage estimates for the key interventions. Coverage estimates of major indicators at baseline are available from the 2005 assessment on the mainland and 2004 on Zanzibar (Table 1). Follow-up surveys are planned in 2007 and 2008, respectively. Resources to complete these follow-up assessments, or to conduct them in a more statistically robust manner will be needed.

These surveys are conducted quickly but do not include representative sampling. Demographic and Health Surveys are, however completed in a nationally-representative sample and can be a much more reliable source of data on maternal, infant and child mortality as well as household and individual coverage for specific malaria interventions. A WHO-AFRO/USG initiative for integrated disease surveillance and response can be adapted for detection of malaria epidemics in the relevant

districts. Funding mechanisms directly to NMCP and ZMCP can be established through CDC cooperative agreements with the 2 ministries of health.

Tracking the progress toward PMI goals of reducing malaria-related mortality will require additional monitoring and evaluation investments. There is no routine registration of deaths in Tanzania, and methods like the DHS do not produce data on cause-specific mortality. Tanzania is fortunate, however, that a number of districts include populations participating in continuous demographic surveillance systems (DSS). These large data collection systems have been used effectively in the country to evaluate the impact of health interventions like insecticide-treated materials and IMCI. A system of 58 villages is currently being used to evaluate the introduction of ACT. It should be noted that these DSSs are usually established for specific research projects and operate in limited geographic areas. Expanding the approach to additional sites would be helpful for documenting the public health effects that PMI should achieve. Funding mechanisms to support expansion of DSS exist with CDC and USAID Tanzania.

Progress in implementing PMI interventions will be assessed through regular review of process indicators completed by the USG agencies and their implementing partners. Once implementing partners and activities are identified, USG and NMCP /ZMCP staff will work with partners to develop a coordinated monitoring and evaluation plan. These will be adapted to the specific situations for mainland Tanzania and Zanzibar. The PMI country team will convene malaria control officials and implementing partners for a quarterly review of progress toward achieving planned objectives for delivery of malaria interventions. This can be the basis for an early warning system to detect bottlenecks, resolve potential conflicts, and ensure rapid, efficient deployment of resources. This quarterly process can also be an opportunity to track financial objectives of the PMI and monitor private sector involvement. Likely private-sector partners include: large-scale employers; net manufacturers, distributors and retailers; pharmaceutical suppliers and accredited drugs dispensing outlets; Bill and Melinda Gates Foundation and Novartis Foundation for Sustainable Development; Medicines for Malaria Venture; and Coca-Cola Kwanza Bottlers.

Other information needed to optimize delivery of malaria interventions can be obtained by carefully evaluating pilot interventions in select areas. Interventions to ensure equity of access to LLINs, particularly among most vulnerable groups, should be explored through a community-development focused NGO. The public health impact of introducing malaria diagnostics for children under 5 in areas of intense transmission and information on the utility of improved diagnostics on prescription practices should also be carefully evaluated. Initiatives already underway on Zanzibar and planned for the mainland could be expanded or supported with supplies of diagnostic test kits. Expansion of ACT in subsidized childhood doses through private sector pharmaceutical retailers is legally possible in Tanzania, but this approach should be carefully managed on a limited scale before being widely implemented. Support for these types of phased implementation could be accomplished through direct purchase of the required commodities and/or through existing funding mechanisms that both CDC and USAID operate with non-governmental partners.

H. EXPECTED RESULTS – YEAR ONE

Expected results for the mainland and Zanzibar are similar as far as percentage increases expected. The one difference is IRS, where the expected result applies only to Zanzibar.

Prevention:

- Proportion of pregnant women who receive two or more doses of IPT during their pregnancy is increased nationwide by 30% above the baseline (49 percent in 2003)
- Proportion of children under five sleeping under an ITN the previous night increased by 20 % above the baseline for mainland (26% in 2003) and 60% increase above baseline for Zanzibar (37% in 2004)
- Proportion of pregnant women sleeping under an ITN the previous night increased by 50% above the baseline for mainland and Zanzibar.
- 70% of houses targeted for IRS have been sprayed on both the mainland and Zanzibar

Treatment:

- Malaria treatment with ACTs implemented in health facilities in 50% of districts nationwide
- At least 50% of children under five with suspected malaria attending a government health facility receive treatment with an ACT

Table 3: Targets for changes in selected indicators for PMI countries- impact of Year 1 funding

Country	IPT		ITNs (<5's)		ITNs (Preg women)		IRS (targeted houses)		ACTs	
	Base-line	Year 1	Base-line	Year 1	Base-line	Year 1	Base-line	Year 1	Base-line	Year 1
Tanzania: Mainland	49%	64%	26%	31%	21%	32%	0%	70%	27%	50%
Zanzibar	49%	64%	37%	59%	38%	57%	0%	70%	10%	50%

I. PLANNED ACTIVITIES AND EXPENDITURES

A total of US $11.5 million is requested for first year PMI activities in mainland Tanzania and Zanzibar. Approximately 59 percent will be expended on commodities. The key commodities to be procured are related to ITNs, IRS, RDTs and ACTs. Because of the desire by both the NMCP and ZMCP to rapidly begin implementation, a substantial proportion of the budget will need to be available in the first semester of US FY2006.

Planned activities for mainland Tanzania and Zanzibar are the result of a consultative process that engaged national authorities, development partners, the private sector, NGOs, and FBOs. A rapid assessment by USAID, CDC and WHO identified the main issues facing the NMCP and ZMCP. Almost all agencies and individuals working in malaria in Tanzania and Zanzibar were consulted during the RA. A follow up consultative meeting was convened for the mainland and another for

Zanzibar in which priorities and issues were discussed with interested parties.[5] Attendance to both meetings was by more than 60 individuals representing somewhere between 40 – 50 agencies. The planned activities described in this document are the result of the consultative process.

All interventions supported by PMI are included in this first year work plan, with the exception of IPT. USAID – Tanzania and CDC – Tanzania have already committed funds from their local budgets to IPT, so it is estimated that for the first year work plan no additional funds will be necessary. Support is through the ACCESS project to implement Focused Antenatal Care, including IPT.

J. INTERVENTIONS - PREVENTION

Proposed USG Component for mainland Tanzania:

Intermittent preventive treatment of malaria in pregnancy (IPTp)

Current Status

The MOH policy for ante-natal services includes IPT with two doses of SP to be given in the second and third trimester of pregnancy. Implementation of this policy began with cascade training from national to district level, with the expected result of at least two trained trainers in each district. The District Council Health Management Teams (CHMT) are responsible for funding and implementing health facility training within their districts. This implementation has been described as very spotty. A survey of non-randomly selected health facilities undertaken by the NMCP in mid-2005 found that 80 percent of pregnant women attending ante-natal care (ANC) clinics had received IPT with SP. The Demographic and Health Survey (DHS) conducted in 2004 found that 94 percent of pregnant women had attended ANC at least once, but only 18 percent reported receiving IPT. The DHS data is likely an under-estimate, and somewhat misleading, as the time period covered by the DHS is five years, and the IPT implementation has only been in the past year.

As part of the Tanzania National Voucher Scheme (TNVS) to provide subsidized ITNs to pregnant women via ANC, World Vision and CARE began providing training that includes IPT, at the sub-district level in September 2004 for ANC staff . This TNVS training has reached approximately half the intended health workers--3216 providers trained as of June 2005. World Vision and CARE anticipate completing the training across the country by February 2006, and to complete mopping up training by June 2006.

Gaps in the IPT program identified by partners included supply irregularity due to poor drug management practices in some districts and facilities, a lack of a strong and coherent communications strategy to address consumer and provider concerns about SP lingering from some sensational press coverage early in the policy change process to SP back in 2001, and inadequate supervision at the district level. Both World Vision and the JHPIEGO/ACCESS project are planning to address improved supervisory tools and training for Focused Ante-Natal Care (FANC) in the next year, in conjunction with the Reproductive and Child Health Unit at the MOH.

[5] Narrative Reports from Consultative Meetings.

USAID/Tanzania has invested $700,000 in FY 2005 funds in the JHPIEGO ACCESS project to strengthen the implementation of IPT in Tanzania. These funds, plus an additional $187,000 grant in FY05 funds from CDC, are sufficient to provide for the intended activities planned with the MOH for completing the roll-out of IPT in Tanzania. The MOH has included procurement of SP for IPT in their annual budgeting process, and the NMCP assures us that there is no further need for PMI support for the IPT program in 2006. This status will be reviewed in late 2006 when the 2007 plan is prepared.

Insecticide-treated nets (ITNs)

Current Status - Mainland

Tanzania has a very strong ITN program, with a long history of strong public private partnership unique in Africa. The partnership is described in detail in the Rapid Assessment report (see Table 3), but the key points are the coordination of ITN activities through the ITN cell in the NMCP, the Tanzania National Voucher Scheme (TNVS), which distributes discount coupons to pregnant women which provide them with the ability to purchase nets from private retailers at about an 80% discount; and the SMARTNET project which coordinates public-private partnership interests. As described in the PMI Tanzania 5-year strategy document, the plan for ITNs will focus on rapidly expanding ITN coverage. This will be done via three related lines of work.: expansion of the TNVs to infants, a safety net for ensuring equity and the transfer of technology for LLINs to local manufacturers.

Table 4: ITN Partners in Tanzania

Partner and activity	Commodities	Services	Salaries	Technical Assistance	Other support
SDC/STI ITN cell	--	--	580,000	500,000	200,000
TNVS	$12,000,000	3,500,000	--	4,300,000 850,000	125,000 60,000
DfID Smartnet	$8,000,000	3,240,000	2,800,000	--	--
DCI					
JICA	$250,000	400,000	--	--	--
UNICEF	$700,000	50,000	--	--	--

Expansion of the TNVS to Infants (USD $3,207,000)

As described in the PMI Tanzania 5-year strategy document, the plan for ITNs will focus on rapidly expanding ITN coverage. The TNVS will be rapidly extended to include infants as well as pregnant mothers across the mainland. In this way, under-5s will be assured of having a net once the child is old enough to leave the mother's bed. In the first year, more than half the regions of Tanzania will

begin distributing vouchers to mothers or caretakers of infants receiving vaccinations at immunization posts. These vouchers provide families with a subsidy of about 80% the retail price of an ITN, putting ITNs in the reach of about 65% of Tanzanian households. Currently the TNVS for pregnant women reports an 87 percent voucher redemption rate. For the remaining households, the PMI will begin implementing a program in at least 3 districts to guarantee LLINs are available to underprivileged households with pregnant women or infants, described below. This activity will be implemented in conjunction with the ongoing TNVS voucher scheme for pregnant women funded by the GFATM. The FBO MEDA has the contract from the NMCP for the logistic management component of the TNVS. The PMI can achieve significant savings by "piggy-backing" on this existing activity to distribute vouchers for around 1 million ITNs in the first year for a relatively minor additional investment for administrative and logistic, according to MEDA. World Vision and CARE have existing contracts for the training and promotion of the TNVS, and can easily adapt their activities to include the new infant voucher with similar savings. Other than the technical assistance provided under sub-grants to NGOs, PMI will not need to provide additional technical assistance.

The NMCP considers the TNVS a highly sustainable program, in that the partnership with the private sector and the donors creates a sustained demand for ITNs in the unsubsidized market as well. It is hoped that over time, as ITNs become an accepted part of daily life, the need for subsidies from donors will decline. This activity is of the highest priority to the NMCP.

Timeline - Expansion of TNVS

A first step in this activity will be to negotiate with the development partners the different contributions each will make to the expansion. Because the voucher will be used distributed via immunization clinics rather than ante-natal clinic, it will be necessary to conduct a brief re-training to update health workers and vendors. It may be necessary to provide subsidies to some vendors, at least initially, as vendors will experience a growth in sales as a result of more vouchers being given out. The NMCP has scheduled a mass re-treatment campaign as part of this intervention to convert regular nets to LLINs using KO tab 123.

The "Safety Net" Program –Ensuring equitable coverage of ITNs (USD $590,000)

The TNVS strategy relies on market-based delivery of nets and a targeted subsidy for pregnant women, and eventually infants. It does require a small co-payment of not less than 250 TSh, which still may be too much for some very poor families to part with. For this reason, the approach may lead to lower levels of coverage among the poorest members of the community—precisely those most in need of an ITN. While there is a village-based system which states that local leaders are to compile lists to allow very poor families to be exempt from cost sharing at health facilities, this system appears to not function well in many villages. PMI will support development of a pilot structure to identify the most vulnerable households least able to afford even a subsidized net and collaborate with faith-based organizations and community leaders to provide them with fully subsidized nets. This system will explore a range of subsidy options, beginning with a full-price voucher via the TNVS. The Tanzania Social Action Fund (TASAF) financed by the World Bank is likely to be a partner in this activity. Once mechanisms are established and proven to be workable and fair, it can be scaled up in subsequent years. Partners in this activity are the SDC and DfID. A

subset of this activity will be reaching persons living with HIV/AIDS with LLINs. This activity will be coordinated with the PEPFAR activity already under way in Tanzania. Technical assistance will be provided through the sub-grants to faith-based organizations that will be contracted to implement this activity.

Timeline – Safety Net

One of the first steps for this activity will be to decide what scheme(s) to use for making the ITNs available. A concurrent task will be to negotiate with partners on best approaches to ensuring equity in the TNVS. Also with partners, a selection of focus districts will be made. Depending on the scheme adopted, materials will need to be developed or adapted. Constant supervision and monitoring will be required as there is potential for leakage in this activity.

LLIN technology transfer (USD $600,000)
[Pending review by Steering Group]

The third element of our ITN strategy, is technology transfer for LLIN production to the major private sector producers of nets in Arusha and Dar es Salaam. This supports both President Bush's emphasis on Public-Private Partnerships in the PMI as well as the Government of Tanzania's ITN strategy. This strategy will rapidly change the proportion of nets in the country which are long-lasting nets (LLINs), a specific priority of the PMI. While the PMI will work with the NMCP, other donors and the private sector to move toward provision of more durable LLINs, the first year will concentrate on significantly improving the manufacture and longevity of the current insecticide treatment through existing mechanisms.

Tanzania has a unique manufacturing base in Africa for the local production of insecticide-treated nets. In past years, this base has been supported by the NMCP via DfID funding and the GFATM, and has resulted in a highly-competitive domestic market for ITNs. This competition, combined with the Government of Tanzania's removal of taxes and tariffs on mosquito nets, has resulted in dramatic drops in the market prices of ITNs, the nationwide mandate that all nets be sold bundled with an insecticide treatment kit (funded by DfID), and uniquely high numbers of nets sold on the commercial market with no subsidy (beyond the insecticide kit). The USG PMI plans to support this successful example of competitive market economics with technical and material assistance to speed the transition of this manufacturing capacity from the production of bundled ITNs to true long-lasting insecticide-treated nets. This transition will not only directly contribute to the PMI's targets for Tanzanian coverage (through increasing the proportion of nets in use by households which are active in terms of insecticidal effect, ie, an "ITN") rather than simply a net), but will also provide a huge boost to the entire region. The Tanzanian manufacturers supply a large proportion of the ITNs currently procured by Zambia, Malawi, Uganda and Kenya.

USAID has experience in this area from its Netmark project, which has been developing the technology being discussed with its partners. Drawing on this experience, USAID suggests that in transferring LLIN technology to commercial firms the PMI should follow a "joint risk*joint investment" approach and definitely not rely on a full equipment handout to private companies. To ensure sustainability and productive use of donor support, the commercial firms must also invest their own funds from the beginning. There are three cost components for transferring the NetMark

LLIN technology: 1) treatment equipment; 2) insecticide; and 3) technical support and training. To encourage the adoption of an LLIN technology, donors could offer to contribute in one or more of these areas based on a detailed MOU that defines roles, expenditures, and performance requirements (e.g., the production of a set number of LLINs within a certain period) of each of the parties. With interest rates of 25% or more in many African countries, some level of financial support is important to help a company invest and generate income for further expansion quickly. The parameters of joint investment should be sorted out on a case-by-case basis to fit the company's current circumstances.

1) Equipment: Companies are generally always ready to invest in equipment that adds to their capital stock and provides them with additional production capability; however, given high interest rates, the donors could offer to pay for a percentage of the equipment cost and/or, if t he equipment if purchased from a U.S. manufacturer, see if the ExIm Bank would provide low cost financial support to help the deal happen.

2) Insecticide: A continuous supply of insecticide formulation is needed that will probably cost $1 to $1.50 per treated net. A donor could offer to provide several months supply of insecticide to help the production process get started and help the company generate some working capital if it has already used its funds to purchase the equipment.

3) Technical Assistance: Help will be needed with installation and the training of staff to run the equipment and chemical feed system and to test the finished LLINs on a regular basis. The insecticide manufacturer may provide some free T.A. if a net company signs a long-term agreement to buy its insecticide. The equipment needed to set up a full testing lab costs about $80,000 using current technologies. There may also be a need for some marketing support to help identify the market for these LLINs and even line up potential buyers therefore decreasing the risk of making the investment.

Finally, with the transfer of technology comes a need to ensure that LLINs produced by partner companies maintain an acceptable level of quality. In order to do this the USG PMI should provide TA and some incentive within the joint-investment model to ensure adequate in-house quality control capacity. Each company must have the proper equipment, staff and training in quality assurance. This is an area where many companies are not likely to make adequate investment, and should be strongly supported within any MOU with companies. The PMI and other participating donors should also consider on-going TA and support to local or regional regulatory agencies who could serve as independent quality control reference centers to protect donors, NGOs and consumers from sub-standard LLINs coming on to the market.

We anticipate that via a donor consortium that includes USG, DfID and the SDC, the three largest manufacturers in Tanzania, producing about 96% of the total net production, can receive the know-how and equipment necessary to produce polyester LLINs. In conjunction with this support, the USG will advocate for the imposition of regulatory standards requiring that nets produced for sale in Tanzania are stronger (at least 100 denier) than currently is the case. More durable nets will provide more efficient subsidies for donors, reduce the number of nets needed to provide the optimal 59 months of protection needed for each child (from conception through their 5th birthday), and reduce costs for Tanzanian households over the long term. The USG will collaborate with DfID in developing a package of assistance for the private sector net manufacturers. DfID is introducing a long-lasting treatment kit beginning in early 2006 (the KO Tab 123 from Bayer) to be

bundled with all nets produced for the Tanzania market. All agree that the bundled net approach, while a vast improvement over untreated net sales, does have major limitations and that manufacturing LLINs instead would be much better.

Timeline – LLIN technology transfer

Plans will be developed between November 2005 and March 2006 for the assistance package and the Memorandum of Understanding between the private sector manufacturers, the donors and the GoT. PMI representatives will meet with the NMCP and partners to develop a strategy for approaching the manufacturers. The NMCP and SMARTNET have been working with the manufacturers for several years now, and it has been agreed that they will lead the effort rather than PMI try to develop a new relationship. Once assurances are obtained from manufacturers of their interest in accepting a technology transfer and the obligation that this will entail, an assessment will be carried out of each to evaluate their needs and pattern PMI's support in the best possible way. Detailed specifications and a timeline for procurement, installation, testing and production will be worked out with the manufacturers. Quality assurance mechanisms will be developed and implemented.

Zanzibar LLINs Jump Start (USD $580,000)

The GFATM Round 4 Grant to the Zanzibar MOH provides funds for the provision of LLINs to pregnant women and children under 5 throughout Zanzibar. It is anticipated that the distribution will be free of charge and delivered via the public sector health facilities. PMI will accelerate this distribution and assist the ZMCP to reach their coverage targets by providing approximately 130,000 LLINs to Zanzibar for free distribution in December, 2005. These nets have already been ordered, and will be in Zanzibar by December 19, 2005. Negotiations and planning activities are underway with the ZMCP and NGOs to design the most effective methods for equitably and efficiently distributing the LLINs to ensure the nets go to the target populations and that householders are helped to deploy the nets for effective use. Nets hung immediately after receipt are much less likely to "leak" or be sold, and to be used by the intended recipients. The T-Marc project is already providing technical assistance in all aspects of the launch. The President of Zanzibar is scheduled to attend the launch.

Generic ITN promotion in Zanzibar

ITNs are only effective when they are used, which requires the consumer to be aware of not only the value of the net in preventing malaria, but also that it needs to be deployed properly every night and that young children and pregnant women should be given priority for sleeping under the net. This generic promotion is linked to the Zanzibar Jump Start for LLIN distribution. The approximately $50,000 for this activity is provided by USAID/Tanzania via its T-Marc project using FY 2005 funds, so it is not listed in the budget table in this document.

Indoor residual spraying (IRS)

Current Status:

There are currently no IRS activities being implemented in either in mainland Tanzania or Zanzibar, although some limited procurement of IRS equipment and insecticides is reported in selected epidemic-prone districts. IRS has been done before in both the mainland and Zanzibar with good results. However, once the donor resources stopped, both the mainland and particularly Zanzibar, were left in a weakened position with resurgent malaria and higher case fatality rates due to the reduced natural immunity of the population.

Proposed USG Component:

IRS and response capacity in epidemic-prone districts (USD $600,000)

Significant support will be provided to the NMCP to establish effective IRS capacity in epidemic-prone districts on the mainland, as described in the Epidemics Surveillance and Response Section L on page 23.

Indoor Residual Spraying in Zanzibar (US $2,050,000)

Zanzibar has proposed a vector control program that would include an initial round of indoor residual spraying accompanied by a rapid scale up of LLINs procured with a mix of GFATM and PMI resources. The Government of Zanzibar has specifically requested support for this activity. From the President of Zanzibar to the Minister of Health to the Permanent Secretary all are in agreement that IRS in needed in Zanzibar. A letter to this effect has been written by the Permanent Secretary directed to USAID – Tanzania. The PMI will provide the IRS component, as well as augment the rapid provision of LLINs to target populations. This approach is both scientifically and logistically feasible. Currently, coverage of insecticide treated bed nets in Zanzibar is low. However, Zanzibar does have the capacity to achieve high coverage with IRS. A single round of spraying would reduce vector abundance and malaria transmission for 6 months allowing for the scale up of ITNs. This approach essentially includes an "attack" phase of indoor residual spraying followed by a "maintenance" phase of ITNs. Once achieved, high coverage of ITNs is likely to reduce the malaria transmission from meso- to hypo-endemic levels. Steps must be taken to ensure continued high coverage of nets and rapid treatment of malarial fever. The surveillance system will be tailored to monitor closely increases in malaria incidence, which could be prevented with the rapid deployment of IRS teams. IRS capacity will be retained for targeted spraying in areas with persistent or re-emerging transmission. IRS will continue until epidemiological and entomological monitoring indicates it is not longer necessary—transmission has dropped to levels where the LLINs can be expected to maintain low transmission without further routine IRS.

IRS Timeline

IRS in mainland Tanzania and in Zanzibar will be managed concurrently. The timeline is similar for both countries. The activity starts with an environmental assessment in Tanzania and Zanzibar (Dec 2005), followed by procurement of IRS commodities (First quarter of 2005), training of IRS Teams (June –Aug 2006), spraying of targeted areas (Sep – Nov 2006) and entomological data collection for

the first phase of the activity (June 2006). Technical assistance during the first two years by Research Triangle Institute will ensure that IRS in conducted according to internationally accepted standards.

Urban Malaria Control in Dar es Salaam (USD $200,000)

Dar es Salaam contains approximately 10% of mainland Tanzania's population, many of whom live in the peri-urban areas where this project has documented transmission of malaria. Entomology studies have shown that the Anopheles mosquito vectors in urban Dar es Salaam are biting primarily outdoors, and in early evening hours. This means the standard PMI indoor interventions of LLINs or IRS will not be effective in preventing malaria in this setting. Urban Dar es Salaam consumes a large quantity of anti-malarial treatments in both public and private facilities. The municipality is developing plans to improve diagnostic procedures in conjunction with this mosquito control project to reduce misdiagnosis of fevers as malaria. Reducing this consumption will free up urgently needed supplies of ACTs for the rural populations, which are more likely to really need these drugs.

This project is an on-going PPP with strong involvement by the municipal governments of Dar es Salaam. This strong participation by local government authorities builds the human resource skills in supervision and monitoring, as well as the political commitment for malaria control to ensure long-term sustainability of this mosquito control program. The PMI contribution will consist of supporting the application of the Vecto-bac ® larvicides being donated by Valent BioSciences and the epidemiological and entomological monitoring to ensure the proper targeting and impact of the intervention. The PMI contribution to the 2006 activities will provide approximately 50% of the total cost of the activity, with the remainder being provided by the other partners and the recipient communities. Partners include: Dar es Salaam Municipal government, Valent BioSciences, Swiss Tropical Institute, Wellcome Trust, JICA, Bill & Melinda Gates Foundation, USAID

Entomological monitoring for mainland and Zanzibar (USD $50,000)

Introduction of free LLINs on Zanzibar and expansion of TNVS on the mainland will require some additional monitoring of ITN coverage, LLIN effectiveness, and mosquito surveillance which is not currently planned. Capable researchers and facilities for these assessments (net bioassays and experimental huts) are present in country and could take the lead on these activities with support from CDC experts. In addition, longitudinal monitoring of vector populations has been ongoing in 3 districts on mainland and could be extended to observe the effect of improved ITN coverage on mosquito vector populations, which could serve as an early indicator of the potential effectiveness of the strategy. Ongoing entomologic monitoring in 5 sites on Zanzibar, will have 1-year's worth of data in January 2006, including insecticide resistance studies. PMI funds will build on that base to ensure that the IRS is having the intended effect of rapidly reducing transmission, and to provide the ongoing basis for evaluating the continued need for IRS in areas in which EIRs remained high, showing continuing high levels of transmission.

Timeline – Entomological monitoring

Most systems for this activity are already in place. The main decision will be when to conduct monitoring. It is expected that for the mainland it will March to September, during the main rainy season. For Zanzibar it will be 6 months to 1 year after introduction of ITNs and IRS

K. INTERVENTIONS – CASE MANAGEMENT

Malaria diagnosis and treatment (Case management)

Current Status - Mainland

The most important issue facing the NMCP regarding case management of malaria is the issue of the introduction of ACT[6]—both in respect to costs as well as re-training of health workers. Availability of ACT may be an issue, but at present, WHO has assured the supply, at least for the first half of 2006. Estimation of costs for ACT in the mainland did not include any subsidies to the private sector, nor took into account the ACT needs for the refugee camps in western Tanzania. Costs of the ACTs in the public sector, at least for the first two years come from GFATM. It is expected that new proposals to GFATM will include financing of ACTs beyond the first two years. PMI will not procure ACTs in the first year of the project (except in support of the ADDO activity) since the GFATM will fulfill all needs in the public sector.

Approximately 9,000 health workers will need to be trained in the use of ACT. Training of regional and district trainers has begun and is expected to be completed by November 2005. Resources for training at the district level have been included in the NMCP work plan, however they are deemed insufficient. Support to this training has benefits beyond teaching health workers how to use ACTs as the training includes IPT, drug management and management of severe malaria. Resources for follow up and supervision are also missing. Given that IMCI includes case management of malaria in children under five, it will be necessary to also provide support to IMCI training.

In the private sector a new class of drug shops are authorized to sell a limited list of treatment-only medicines--the Accredited Drug Dispensing Outlets (ADDO). These ADDOs will be privately operated outlets authorized to sell a range of essential drugs classified as prescription-only with training and supervision from national and local drugs regulatory authorities. Currently only about 100 ADDOs exist in the Ruvuma Region where the concept was pilot-tested by TFDA and MSH's Strategies to Enhance Access to Medicines project (SEAM) funded by the Bill and Melinda Fates Foundation. In 2005-2006 the program will be rolled out to 2 additional regions: Morogoro, with support from USAID, and Rukwa, with direct support from the Government of Tanzania. No resources are as yet available for providing a subsidized ACT through these shops, but it would be relatively straightforward opportunity for a public/private sector initiative.

The advent of ACT, which is significantly more costly than current SP, has motivated the NMCP to look for ways of increasing diagnostic accuracy. One way to improve diagnosis, and, potentially, reduce costs, is the rapid diagnostic test (RDT)[7]. These tests require minimal training (no

[6] The ACT chosen by the NMCP is a fixed-combination formulation of artemisinin, Artemether-Lumefantine (Coartem®)
[7] RDTs are also known as "Dipsticks" or Malaria Rapid Diagnostic Devices (MRDDs)

microscopy is involved), are low in cost (USD $0.50 -$0.90 depending on the type of test) and give results relatively fast (10--15 minutes). The main drawback to the tests is that some of them are unstable in areas of high temperatures and humidity and would require a "cool" chain to maintain their accuracy. WHO recommends the use of RDTs in adults, pregnant women and children over five in areas of low to moderate malaria transmission.

Current Status - Zanzibar

Zanzibar has already introduced ACTs and the majority of its health workers have been trained. Current supplies and projected deliveries of artesunate and amodiaquin are adequate for 2006, according to the ZMCP, hence the PMI will not procure additional ACTs for Zanzibar in 2006. But as with the mainland, there is concern about costs and what will happen if the GFATM funds dry up (2007). In collaboration with Medecins sans Frontieres (MSF) and others, the ZMCP has implemented a pilot project using RDTs. Preliminary results show that up to half of fevers clinically diagnosed as malaria were not corroborated when an RDT was done. This has motivated ZMCP to want to introduce RDT in the whole of the Zanzibar.

Proposed USG Component

The PMI proposes the following interventions for case management of malaria: 1) Introduce RDTs; 2) Top up NMCP resources to train health workers for the ACT roll out; 3) Provide subsidized ACTs to ADDOs; 4) Strengthen Medical Stores Department's capacity to deal with the ACT roll out; 5) Improve the management of severe malaria; and 6) provide ACTs to refugee camps in western Tanzania.

Introduction of RDTs in districts in mainland and Zanzibar (USD $500,000)

The NMCP and ZMCP will receive resources from PMI to implement RDTs in a limited number of districts and on a trial basis. RDTs will be executed in strict accordance to WHO recommendations. The success of this activity will have important ramifications; at the individual level, it will facilitate better quality care; at the public health/financial level it has potential for reducing the costs of ACTs significantly. PMI is aware that it is critical that health workers be prepared to deal with patients when RDTs results are negative and will make sure that counseling skills are emphasized during training. In the mainland, resources will allow for implementation of RDTs in approximately 5 districts. In Zanzibar, resources will permit the introduction of RDTs in 3 districts. The total beneficiary population will be approximately 3 million. In both cases, quality assurance protocols will be established, based in part on the Zanzibar experience, and careful monitoring of the impact of RDT on the use of ACTs will be done. If the results of the trial are encouraging, then PMI may consider expanding the use of RDTs to other areas. This activity will last at least one year with the possibility of expansion in the following years. Once the first phase is completed an assessment will be conducted to see if RDTs are a workable alternative in Tanzania. PMI will take on as partners

IHRDC in the mainland and MSF in Zanzibar. No additional technical assistance will be required other than that provided already by PMI advisors on the ground.

RDT Timeline

This activity will begin with the selection and procurement of RDTs (Dec 2005), followed (or concurrent with) by selections in mainland Tanzania and Zanzibar of target districts (Dec 2005). Shortly after, adaptation of the training materials will be done over a period of two months (Jan 2006 - March 2006), subsequently national teams will train trainers in the districts (April 2006) followed by a two and one half period of health worker training and deployment of RDTs. An evaluation of the effectiveness of RDTs and preparation for expansion if the results are positive.

Support to training for ACT roll-out in mainland (USD $500,000)

PMI will provide resources to be applied at the district level for training health workers in the periphery on how to use ACTs in mainland Tanzania. These PMI resources will complement other donor, GFATM and governmental resources already in place. The PMI team will work with the NMCP to plan out the training roll out. The importance of this activity is rooted in the fact the NMCP does not have the financial resources to complete training. Only half of the needed budget for training is available. Given that one of specific objectives of PMI is to make available high quality case management of malaria, it stands to reason that PMI resources be used to complement and complete the task of training all health workers. Some of these PMI resources will ensure that health workers are followed up and supervised and quality assurance mechanisms are in place. The IMCI – malaria link will be emphasized and some PMI support will be provided to training in IMCI. It is expected that 100 percent of health workers in facilities will be trained in ACT by the end of the planning year. The expected contribution to PMI goals is that health workers will be prepared to provide appropriate case management of malaria and use of ACTs. This activity will come on line as the NMCP begins the distribution of ACTs and gaps are identified. More than half of the resources (i.e. USD $600,000 of the required USD $1.1 million)) are already budgeted from GFTAM and GoT funds. PMI will insist that special provisions por persons living with HIV/AIDS are part of the training curricula. No direct technical assistance will be needed for this activity.

Timeline – ACT Training

PMI will work with the NMCP to determine the actual amount of the shortfall (Dec 2005) and then proceed to identify an appropriate mechanism for its disbursement. It has been suggested that an experienced NGO be given a grant to support the training in the field. This mechanism has been used successfully for the Tanzania National Voucher Scheme.

Provide subsidized ACTs to ADDOs in mainland (USD $300,000)

ADDOs are a key ally in making sure that appropriate case management is available to those that need it. PMI will subsidize ACTs for use in ADDOs. The rationale for this activity is that a significant proportion of fevers (up to 70 percent) are managed in private sector dispensaries,

pharmacies, etc. The advent of ADDOs makes available an opportunity to capitalize on private sector entrepreneurship and to reach individuals who seek help in the private sector. Very few PMI resources will be used for training ADDO operators on the new malaria treatment, the majority will support the procurement of ACTs. Overall training, and supervision, as well as resources to expand the ADDO model are already available from other sources. As with public sector training, the ADDO training will emphasize counseling to ensure that patients leave facilities with a clear understanding of how to take the medication and when to come back. This activity will be implemented following the successful experience the SEAM project has had with ADDOs. This activity is the first phase of expansion of the ADDO scheme. Partners for this activity will the RPM+, SEAM project, TFDA, IHRDC, CDC, and, potentially, the Bill and Melinda Gates Foundation. Technical assistance will be provided by RPM+ through periodic visits and support to MSD.

Timeline -- ACTs to ADDOs

In coordination with NMCP, district and ADDOs will be selected in the first step of this activity (Jan 2006). RPM+ has developed materials for training for ADDOs, it is expected that no major revisions will be necessary, nonetheless a quick of review and adaptation will be done, especially in regard to counseling (Feb 2006). Training will be completed over one month, ending in mid March 2006. Beginning in mid February, or earlier, the supply of ACTs will be secured. As with other activities, monitoring and supervision will be constant through the activity.

Improve management of severe malaria (USD $500,000)

For PMI to have impact on malaria mortality actions need to be taken to improve the management of severe malaria from the level of the household to health facilities. PMI will provide resources to train health workers in the periphery and at higher level health facilities to improve the management of severe malaria in 3 pilot districts. Treatment options for managing severe malaria include rectal artesunate, intra-muscular artemether and intra-muscular and IV quinine. Protocols currently exist for peripheral workers to give pre-referral treatments and for situations where referral is not possible. Even so, children rarely receive these treatments and often die without reaching the referral centre. A comprehensive approach will be introduced to enhance mother's recognition and response to potentially severe illness, improve pre-referral care at peripheral level, enhance caretakers' ability to complete referral, improve treatment of severe malaria in health centers and hospitals, and provide malaria prevention for children who survive severe malaria and their siblings.

Strengthen Medical Stores Department's capacity to deal with the ACT roll out (USD $440,000)

The USAID-CDC rapid assessment identified the need to strengthen the MSD's capacity to deal with the logistics of ACT. ACTs come in several presentations and it will complicate the way drugs are ordered, filled and received by MSD and health facilities. PMI will, through its partners, work with MSD to deal with the issues related to ACT. A critical need will be the repackaging of 18 millions doses of ACT. Improvements will also be made to the links between MSD and health facilities as well as the problems with drug management information systems.

Timeline for strengthening MSD

The rapid assessment revealed several areas in MSD's supply and distribution of drugs. Given the nature of the rapid assessment not all areas of MSD's work were analyzed in depth. Therefore, the first activity for this intervention will be to conduct a more thorough assessment of the situation and then develop a detailed plan of support. This assessment can be conducted in January – February 2006 and will be mostly be followed by several technical assistance visits over the first year of PMI.

Procure ACTs for refugee camps in western Tanzania (USD $500,000)

The refugee camps in western Tanzania currently house about 400,000 refugees from conflicts in Burundi and Congo. The numbers are expected by UNHCR to reduce to about 320,000 by the 2006 malaria season. UNHCR has already procured 160,000 ITNs which they will be distributing to the refugees, and will be consolidating the camps to reduce their logistic burden early in 2006. In discussions with UNHCR representatives in Dar es Salaam, the PMI has determined that it's resources could most effectively be used to benefit the refugees by procuring ACTs to be used in the camps by the NGOs currently managing health services there. The NMCP has confirmed that their drug estimates did not include the refugee camps. To fill this gap, the PMI will procure and deliver $500,000 worth of Co-Artem to the NGOs providing health services in the UNHCR camps. Detailed planning for the mix of adult and pediatric doses is ongoing, and the procurement arrangements will be finalized in November/December 2005. CDC is already providing technical assistance to UNHCR.

Other Activities

DSS site support (USD $200,000)

Large populations under continuous demographic surveillance (DSS) are present in 3 districts in Tanzania. DSS data are able to track malaria specific mortality overtime. PMI will provide direct support to maintain and enhance these DSS sites, in order to monitor the potential impact of improved coverage of the PMI preventive and treatment interventions. Because the DSS sites are already established, and they are operating with resources from other sources, PMI resources in year 1 will support <20% of the costs of maintaining these sites. Partners include CDC, Novartis Foundation for Sustainable Development.

Timeline: continuous.

Expert Monitoring and Evaluation for post-intervention (USD $150,000)

PMI will support temporary duty assignments from CDC scientists who will assist local Tanzanian investigators in the evaluation of PMI interventions on Zanzibar and the mainland. In the first year this will include assistance with entomologic monitoring and ITN coverage assessments.

Timeline: As required

L. INTERVENTIONS – EPIDEMIC SURVEILLANCE AND RESPONSE

Proposed USG Component:

Epidemic prevention and response (USD $600,000)

Mainland: While there has not been a major epidemic since 1998, careful monitoring of the impact and effectiveness of IRS on the local mosquito vectors is critical for ensuring both the effectiveness of the current spray round, as well as providing important planning data on insecticide susceptibility, "hot spots" for vector breeding and problem areas for residents' compliance with the spray program. The program will procure insecticide, spray equipment and safety gear for spray teams for selected districts. Detailed plans will be developed with the district malaria/IMCI focal person to include both preventive IRS and treatment responses to high-risk epidemic areas. Monitoring techniques for gauging risk and mosquito populations will be instituted, for improved targeting of the IRS activities for maximum impact and cost-effectiveness. The first year's activities will focus on response, and developing the capacity for detecting epidemics quickly. Future years will broaden this focus to reflect new technologies and methods for forecasting epidemic risks for specific geographic areas, and incorporating this higher level predictive capacity into the district plans. In year one, the PMI program plans to provide significant support to the NMCP's epidemic detection and response efforts in the selected epidemic-prone districts. In these districts, the PMI contractors will work closely with the designated District Malaria/IMCI focal persons to establish planning procedures, collect necessary data for strengthening surveillance (in order to detect outbreaks within a week of their occurrence) and establish depots for the storage of insecticides, spray equipment and safety equipment to respond effectively with IRS. The strategy will be to build the district level capacity to detect and respond quickly and effectively to epidemics, to identify communities and locations particularly prone to malaria infection and transmission, and to establish sound planning for epidemic outbreaks. In addition, preparations will be made to explore in Year 2 the strengthening of a central level capacity to access and interpret rainfall forecasting data in order to establish a forecasting capacity capable of giving districts a 2-3 month warning of likely high risk of malaria outbreaks.

Response to epidemics must include rapid treatment with ACTs as well as vector control responses. A recent report from Ethiopia has suggested that ACTs alone may, in some cases, actually be sufficient to control nascent epidemics, and certainly health facilities in epidemic-prone districts need to develop the capacity to recognize and report higher-than-normal malaria case loads in a prompt manner.

Zanzibar: we do not anticipate an epidemic prediction and response component to the Zanzibar program, please see the IRS section above for a description of related activities.

M. PRIVATE SECTOR PARTNERSHIPS

Current status

In Tanzania the private sector is also involved in the fight against malaria. Coca-Cola Kwanza, in collaboration with Population Services International (PSI), gives seasonal donations from its sales toward the purchase of ITNs for overlooked groups (e.g. pediatric wards in hospitals, orphanages,

etc.). PSI , financed through the U.K. Department for International Development (DiFD), is promoting ITNs through social marketing and establishing a very successful network of private vendors that sell bundled (net and insecticide) ITNs and are self sustaining. The three most important ITN manufacturers in the country are tooling up to satisfy local needs for ITNs. In another example of private sector collaboration, the Tanzanian Food and Drug Authority (TFDA) and the Strategies to Enhance Access to Medicines (SEAM) project are working on the deployment of Accredited Drug Dispensing Outlets (ADDO)—private sector outlets that have been accredited by the TFDA to improve the quality, availability, affordability and use of drugs, including anti-malarials. Yet another example of private sector collaboration is TechnoServe, encouraging local farmers to grow *Artemisia annua*, the plant from which artemisinin is derived for sale drug manufacturers.

Proposed USG Component

NMCP Public-Private Partnership (PPP) Expansion (No Year One funding)

Tanzania currently has an active program in promoting PPPs, and is a model for effective collaboration between the NMCP and the private sector. The NMCP places a high value on it's successful PPP and will continue to pursue ways to strengthen this component. While the PMI will not directly support activities to expand PPP collaborative activities in the Year One Plan, such activities might be supported by other partners in Tanzania, and include examples such as the following:

- Identifying and working with large employers in Tanzania to set up plans to issue ITNs/LLINs to employees as part of the benefits package. These arrangements could include providing nets to employees and their family members free of charge, or on a subsidized price, or on a credit basis with payments made over a period of time through pay deductions.
- Document the benefits accruing to private sector partners from the existing and future partnerships in terms of reduced absenteeism, increased productivity and staff morale.
- Using the current program with Coca Cola as a model (in which Coca Cola Kwanza bottlers contributes one shilling per bottle sold to providing ITNs to needy children), expand PPPs for the subsidized/free provision of ITNs/LLINs to identified needy and vulnerable populations in need of protection.
- Establishing links to employer associations, such as Hotel associations, travel companies and others with links to major industries such as tourism, mining/energy extraction and plantation agriculture, to promote further PPPs for malaria control activities.

Timeline- PPP Expansion

The PMI will not be providing direct support to this activity, and thus the timeline will depend on the NMCP finding other sources of support for implementation.

Summary Tables for Interventions:

Table 5: Planned Obligations FY2006					
Proposed Activity	**Mechanism**	**Budget $ (commodities)**	**Geographic area**	**Description of Activity**	**Relation to Interventions**
PREVENTIVE ACTIVITIES					
Expansion of the TNVS to Infants	NGO grant	3,207,000 (2,309,000)	Mainland, 15 regions	Vouchers	ITNs
The "Safety Net" ITN Equity	NGO grant	590,000 (395,300)	Mainland, 12 districts	Pilot free ITNs	ITNs for poorest
LLIN technology transfer	Netmark, AED SmartNet	600,000 (500,000)	Mainland, donor pool	Machinery for LLINs	ITNs
Zanzibar LLINs "Jump Start"	Direct purchase	580,000 (580,000)	Zanzibar	LLIN distribution	ITNs
IRS and response capacity in epidemic districts	IVM task order/RTI	600,000 (324,000)	Mainland, 3 districts	Improve detection and response to epidemics	Improve IRS capacity and targeting in epidemics
Indoor Residual Spraying in Zanzibar	IVM task order/RTI	2,050,000 (1,200,000)	Zanzibar	Spray houses	IRS implementation
Urban malaria control in Dar es Salaam	IVM task order, RTI	200,000	Dar es Salaam	Vector control program in urban areas	Reduce malaria and mosquitoes in urban areas
Entomological monitoring	IVM task order/RTI	50,000	Zanzibar, mainland 3 districts	Monitor effectiveness of IRS	Effectively plan IRS targeting
Total Prevention $7,877,000 Commodity % 67.4					
CASE MANAGEMENT ACTIVITIES					
Introduction of RDTs in districts in mainland and Zanzibar	WHO umbrella grant	500,000 (500,000)	Mainland, 5 districts; Zanzibar, 3 districts	Introduction of rapid diagnostics	Ensure efficient use of ACTs
Support training for ACT roll-out	NGO grant	500,000	Mainland, all districts	Train health workers on ACTs	Ensure proper use of ACTs
Provide subsidized	WHO umbrella	300,000 (300,000)	Mainland, 4 regions	Subsidized ACTs for	Treatment accessibility

Table 5: Planned Obligations FY2006					
Proposed Activity	**Mechanism**	**Budget $ (commodities)**	**Geographic area**	**Description of Activity**	**Relation to Interventions**
ACTs to ADDOs				ADDOs	
Improve management of severe	UNICEF, NGO grant	500,000 (350,000)	Mainland, 3 districts	Begin implementation of improved severe malaria management	Decrease deaths from severe malaria in facilities
Strengthen Medical Stores Department	RPM+ project	440,000	Mainland, all districts	Strengthen Medical Stores Dept	Ensure ACTs stocked in public facilities
ACTs for refugee camps	WHO UNICEF	500,000 (400,000)	Refugee camps & nearby towns	Provide ACTs for refugee health clinics	ACT for refugees
Total Case Management $ 2,740,000 Commodity % 56.6					
Monitoring & Evaluation					
DSS site support	NGO grant	200,000	Mainland, 1 district	Support malaria mortality data site	Malaria-specific mortality data site
Expert M&E for post-intervention	CDC IAA	150,000	Mainland, Zanzibar	Support data quality	Measurement of results, targeting Yr2
Total M&E $350,000					
PRIVATE SECTOR PARTNERSHIPS					
NMCP Public private Partnership expansion		0	Mainland	Build more PPPs for malaria control activities, TPHA	Increase private sector participation in malaria control
Total PPP $115,000 Commodities % 0					
MANAGEMENT AND ADMINISTRATION					
PMI country staff	CDC IAA, DELIVER/JSI	533,000	Mainland, Zanzibar	CDC&USAID Technical advisors, coordination meetings, in-country travel, office supplies	Implementation management
Total Management & Admin $533,000					
Total		**$11,500,000**		Total	59.6%

Table 5: Planned Obligations FY2006					
Proposed Activity	**Mechanism**	**Budget $ (commodities)**	**Geographic area**	**Description of Activity**	**Relation to Interventions**
				Commodities	(6,858,340)

Table 6: Estimated Budget Breakdown by Intervention					
	ITNs	**IRS/Epidemics**	**Treatment**	**IPT**	**Other**
Commodities	**$ 3,784,340 (76%)**	**$1,524,000 (53%)**	**$1,550,000 (57%)**	**--**	**See private sector**
Salaries	**--**	**$100,000 (3%)**	**---**	**--**	**--**
Services	**$1,092,660 (22%)**	**$1,035,000 (36%)**	**$1,110,000 (41%)**	**--**	**$200,000 100%**
Technical Assistance	**$100,000 (2%)**	**$240,000 (8%)**	**$80,000 (3%)**	**--**	
Other	**--**	**--**	**--**	**--**	**--**
PMI Budget	**$4,977,000**	**$2,900,000**	**$2,740,000**	**--**	**$200,000**
Total	**100%**	**100%**	**101%**	**100%**	**100%**

Note: PMI Budget totals for each intervention do not sum up to the full country total because many activities cut across technical interventions, such as PMI country team salaries, M&E, IEC etc.

Table 7: Budget Breakdown by Implementing Partner		
Implementer	**Intervention**	**Amount ($)**
AED/TMark	IEC support	$0
AED/Netmark	LLIN	$600,000
CDC/IAA	Admin and Tech support	$500,000
AtoZ Textiles contract	Procure LLINs	$580,000
MEDA (FBO)	Procure ITNs	$3,207,000
NGO Grants	Various activities, implementers to be determined	$1,325,000
MSH/RPM+	ACT logistics	$440,000
RTI/IVM	Vector control: IRS, Epidemics	$2,900,000
JSI/DELIVER	Admin support	$183,000
UNICEF/WHO	Commodity procurement	$1,650,000
	Total:	**$11,500,000**

Table 8: Global Fund Activities Status						
Disbursed funds	**ITNs**	**IRS**	**Treatment**	**IPT**	**Epidemics**	**Other**
Mainland – R1	**$8,790,612**	--	--	--	--	--
Mainland – R4	--	--	**$18,575,572**	--	--	--
Zanzibar – R1	--	--	**$781,220**	--	--	--
Zanzibar – R4	**$2,792,077**	--	--	--	--	--
Planned ($$ and dates	--	--	--	--	--	--
Mainland – R1	**$11,000,000**	--	--	--	--	--
Mainland – R4	--	--	--	--	--	--
Zanzibar – R1	--	--	--	--	--	--
Zanzibar – R4	--	--	--	--	--	--

Table 9: Private Sector Contributions and Activities						
Company/Organization	**ITNs**	**IRS**	**Treatment**	**IPT**	**Epidemics**	**Other**
Coca-Cola Tanzania	**$20,000**	--	--	--	--	
Valent Biosciences	--	--	--	--	--	**$35000 TA,+Bti**
A to Z Textiles	--	--	--	--	--	
Syngenta	--	--	--	--	--	
Wellcome Trust	--	--	--	--	--	**$175,000 TA+comm.**
JICA	--	--	--	--	--	**$20,000 salaries $40,000 services**
Swiss Tropical Institute	--	--	--	--	--	**$20,000**

N. STAFFING AND ADMINISTRATION

The PMI in Tanzania will have two staff, one representing USAID and one representing CDC (PMI Coordinators). Both staff will be based in Dar es Salaam. Their activities will include the development of PMI strategies and work plans, coordinating with national authorities, managing collaborating agencies and supervising day to day activities. Additionally, one technical person will be hired to coordinate IRS activities in Zanzibar and he/she will be based there.

PMI managers will meet on a monthly basis with NMCP, ZMCP, USAID and CDC to assess progress, identify problems and resolve difficulties. Additionally, a more formal review of work plans and activities will be carried out every quarter to ensure that the work plan is being adhered to. Out of these quarterly meetings parts of the quarterly report to PMI – Washington will be developed. Reports, once approved by PMI, will be shared with all partners.

Table 10: Staffing and Administration Budget ($)			
Staff/ Consultants	**Cost year-to-date**	**FY2006**	
In-country PMI staff		**$708,000**	
Consultants		**$75,000(CDC)+$275,000 (IVM/RTI)+$100,000 (RPM/MSH)+$30,000 (Tmark/AED)=$480,000**	

O. COMMUNICATION AND COORDINATION

Key to the success of PMI will be how it fits, complements and coordinates activities with government, development partners and with USAID and CDC headquarters. PMI – Tanzania understands that communication and coordination will require constant vigilance and that there might be a steep time cost for ensuring that stakeholders are informed and participant in PMI. In Tanzania, PMI made sure that a transparent consultative process was followed in the development of the PMI strategy and work plan. As a result, all stakeholders strongly buy in to the current PMI strategy and 1-year work plan. The gist of this process will continue to guide our efforts in Tanzania. However, it must be made clear that in the case of Tanzania a double effort in communication and coordination will be required as we are essentially dealing with two countries—mainland and Zanzibar.

At the country level, PMI will coordinate through mechanisms already existing in the mainland and Zanzibar. Such mechanisms include the National Malaria Advisory Committee (NMAC), the various sub-committees (e.g. case management, vector control, IEC, etc.) and the Inter Agency Malaria Coordinating Committee (IAMCC). PMI has already been invited to participate in the National Insecticide Treated Net Programme (NATNETS) as a way to coordinate efforts with partners already involved with ITNs. Additionally, PMI will also work through the Development Partners – Health (DPH) group to ensure that all are informed and on board with PMI work plans.

PMI has been allocated office space in both the NMCP and the ZMCP. This will facilitate communications between technical staff and will ensure that PMI works closely with the respective programs. In addition, PMI will institute monthly and quarterly coordinating meetings with the NMCP and ZMCP. Quarterly reports will be produced in coordination with both programs.

Communication with USAID and CDC headquarters is already effective through e-mail, phone and fax. Visits from HQ staff will be encouraged to enhance already efficient communications.

P. ANNEXES

1. Comprehensive Year One timeline for PMI activities (including ACTs, IPT, ITNs, and IRS) in the country

2. Monitoring and evaluation plan for Tanzania

3. Entomological monitoring and evaluation

Annex 1

Comprehensive Year One timeline for PMI activities (including ACTs, IPT, ITNs, and IRS) in the country

President's Malaria Initiative
Malaria Country
FY 2006

ACTIVITY	2005	2006											
	OCT-DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Expansion of TNVS to infants													
Negotiations with partners													
Prioritize districts													
Adoption of TNVS materials													
Training of vendors and promotion													
Subsidies to vendors													
Implementation													
Mass Retreatment to make LLINs													
Safety Net Program													
Decide on mechanisms													
Negotiate with partners													
Develop protocols and materials													
Selection of districts and compilation of lists													
Dissemination of new vouchers													
Baseline													
Implementation period													
Monitoring and Supervision													
LLIN Technology Transfer													
Meet with interested parties													
Conduct needs assessment													
Meet with net manufacturers													
Define specs and steps for purchasing equipment													
Procure and installation of new equipment													
Initiate production by equipped factories													
Zanzibar LLINs Jump Start													
ZMCP and PSI meeting													
Official Launch													
ACTIVITY Continued	2005	2006											
	OCT-DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Preparation for Jump Start and Mass Media													

Continued IEC support													
Distribution of LLINs													
Indoor Residual Spraying in Zanzibar													
Environmental Assessment TNZ and ZNZ													
Order commodities													
Training of IRS teams													
IRS Conducted													
Entomological Data Collection													
Entomological Monitoring													
Environmental Assessment TNZ and ZNZ													
Order commodities													
Training of IRS teams													
IRS Conducted													
Entomological Data Collection													
Malaria Diagnosis and Treatment													
Introduction of RDTs													
Monitoring and supervision													
Selection and procurement of RDTs													
Selection of Districts for RDT													
Adaptation of training materials													
Training of trainers													
Health Worker training													
Deployment of RDTs													
Evaluation													
Provide subsidized ACTs to ADDOs													
Determine shortfall in Training resources													
Prepare grant to NGO													
Award grant													
Health Worker Training													
Follow Up													
Improved Management of Severe Malaria													
Contract NGO to do training													

ACTIVITY Continued	2005	2006											
	OCT-DEC	JAN	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Selection of districts													
Prepare training materials													
Training in districts													
Training of trainers													

Monitoring and supervision													
Strengthen Medical Stores													
Assessment of MSD													
TA Visist													

Annex 2

Monitoring and evaluation plan for Tanzania

President's Malaria Initiative Countries – Routine Monitoring Plan

Example Indicators	Frequency of Measurement	Source of Data	Cost to PMI
Insecticide-treated materials:			
No. of ITNs purchased/distributed by route of distribution (ANCs, campaigns, commercial sales, etc.)	Quarterly	Routine reports from all partners	0
Case Management:			
No. of municipalities where ACT has been implemented	Quarterly	NMCP reports	0
No. of ACT treatments administered (by age group)	Every 6 months	NMCP/NGOs	0
No. of health facilities offering laboratory diagnosis of malaria (microscopy/RDTs)	Quarterly	Reports from MoH, NGOs/FBOs, and others	0
Drug efficacy/ drug resistance monitoring	Yearly/ Bi-yearly	Specialized in vivo/ in vitro evaluations	*
Insecticide resistance monitoring	Continuous	Specialized bioassays of field-collected mosquitoes	*
Drug safety monitoring	Continuous	Sentinel-site system of passive reporting and case follow-up	*
Drug quality monitoring	Continuous	National Drug Regulatory Authority	*
Intermittent Protective Treatment:			
No. of municipalities where IPTp with SP** has been implemented	Quarterly	NMCP reports	0
No. of SP treatments administered	Quarterly	NMCP/MoH reports	0
% of women delivering at health facilities who have received IPT1 and IPT2	Quarterly	NMCP/MoH reports	0
Epidemic Preparedness and Response:			
No. of municipalities with epidemic-prone areas that have a written epidemic response plan	Every 6 months	NMCP reports	0
No. of municipalities with epidemic-prone areas that have a functional monitoring system in place (e.g., monitoring charts)	Every 6 months	NMCP reports	0
Communications, Training, Coordination:			
No. of BCC materials produced/disseminated (by intervention and type)	Quarterly	Routine reports from partners involved in BCC	0
No. of training courses offered/persons trained on malaria micro-scopy, case management, management of severe malaria, IPT, etc.	Every 6 months	Training reports	0

No. of meetings of National Malaria Task Force (or equivalent) and Working Groups	Quarterly	Malaria Task Force/Working Group minutes	0

Footnotes: * = Cost of activity to PMI will depend on whether or not system already in place, functional, and adequately resourced.

** = Assumes no major policy change regarding SP use for IPTp within life of initiative; otherwise will monitor use of recommended drug

Evaluation proposal for PMI - TANZANIA

Activity (M&E, operations research, capacity building, or programmatic activity)	Year and estimated cost[a] ("x" indicates activity is proposed for a given year)						
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
"Phase" of programmatic activities	Base-line	Scale-up		Full implementation (i.e., malaria mortality should be reduced by 50% for the 3-year period)			
DHS with "regular" sample size (10,400 women), i.e., to estimate $_5q_0$ for the 5 years before survey	Done						
DHS with extra sample size (17,326 women), i.e., to estimate $_5q_0$ for the 3 years before survey[b]							X ($2,700,000)
DSS x 2 with population sizes of 60,000 each to measure all-cause and malaria mortality[c]		X ($200,000)*	X ($200,000)	X ($200,000)	X ($200,000)	X ($200,000)	
Study to estimate sensitivity and specificity of verbal autopsy's ability to identify malaria deaths[e]			X ($40,000)				X ($40,000)
National MIS with anemia and parasitemia[e] at end of rainy season (plus info for wealth index and factors related to all-cause mortality)[a]		X ($200,000)		X ($200,000)	X ($200,000)		
National health facility survey in outpatient sick child clinic and antenatal clinic to evaluate malaria case management, antimalarial drug stocks, IPT use, and other malaria-related health worker functions		X ($60,000)		X ($60,000)		X ($60,000)	
Collect HIS data and hospital data on outpatient and inpatient child malaria, severe anemia, deaths, hospital utilization, ITNs distributed (regular, LLITNs), ITNs retreated, and ACTs used for children[e]		X ($30,000)	X ($20,000)	X ($20,000)	X ($20,000)	X ($20,000)	X ($20,000)
Data collection for "confounders" (rainfall, urbanization, wealth, etc)		X ($5000)	X ($5000)	X ($5000)	X ($5000)	X ($5000)	X ($5000)
Supervision and Quality Improvement Data monitoring		X ($80,000)	X ($50,000)	X ($50,000)	X ($50,000)	X ($50,000)	X ($50,000)
Estimated total for each year		**$575,000**	**$315,000**	**$535,000**	**$475,000**	**$335,000**	**$2,815,000**
Estimated total for each year that PMI would have to cover (assuming							

other malaria initiatives do not contribute to the plan and assuming two DSS sites are supported) **Estimated grand total for all years = $2,660,000**		$535,000	$315,000	$535,000	$475,000	$335,000	$465,000b

Footnotes (Tanzania plan):

*This amount ($200,000) is included under the country budget.

[a] Many of the costs are still very rough estimates. Except for DHSs, cost estimates do not include indirect costs that might be needed for organizations that work in the field to carry out the activities. If the capacity-building component of the plan is successful, MIS costs might decrease over time, as less external technical assistance is required.

[b] Assumes a shorter questionnaire that only collects information needed to estimate child mortality for the additional sample of women (to reduce survey cost). Also, it might not be necessary to collect anemia in this survey, as the M&E plan proposes an MIS in 2010 that measures anemia. The estimated cost of a DHS in 2011 with a regular sample size is $2,350,000; increasing the sample size as proposed would add another estimated $350,000 (so the total estimated cost for the large DHS in 2010 is $2,700,000). It is assumed that the PMI would only have to pick up the add-on cost of $350,000.

[c] The cost estimate is based on an annual cost of $3 per person under surveillance per year, plus $100,000 during the first year for start-up costs, such as vehicles and computers.

[d] Necessary conditions are: 1) a high proportion of births occur at health facilities, 2) a high fertility rate, and 3) low use of contraceptives.

[e] This is an operations research component of the evaluation. The idea is that the PMI might be a unique opportunity to collect large amounts of monitoring and evaluation data at one time; thus, for a few targeted data types (e.g., parasite prevalence, hospital-based surveillance), the M&E plan proposes to collect the data and then evaluate its validity, utility, and cost.

Annex 3
Entomological Monitoring and evaluation

PMI – Entomological Monitoring and Evaluation

Tanzania will have the capability to effectively monitor vector mosquito populations for susceptibility to insecticides to detect selection for physiological and behavioral insecticide resistance associated with IRS/ITN use. Behavioral resistance will be monitored through human bait collections conducted inside and outside houses with IRS/ITNs. The *Anopheles* species mosquitoes collected from the human bait collections will be evaluated for physiological resistance using the CDC Bottle assay, and subsequently identified to species and the sporozoite rate determined using the *P. falciparum* CSP ELISA.

Indoor *Anopheles* vector densities will be monitored to detect changes in IRS/ITN insecticidal efficacy and changes in man-vector contact rates. Efficacy will be monitored and evaluated using indoor pyrethrum spray collections with the mosquitoes collected identified to species and the sporozoite rate determined using the *P. falciparum* CSP ELISA.

Quality assurance of IRS treatment and ITNs will be monitored to verify both initial efficacy and longevity of ITNs and IRS treatment. The standard WHO cone bioassay will be used to for these evaluations.

Entomology M&E will require personnel trained in mosquito collection and identification and an insectary to rear mosquitoes needed for the bioassays. An ELISA testing capability may be established in Tanzania, or mosquitoes will be sent to a central/regional laboratory for analysis. When resistance is identified, CDC-Atlanta staff will assist in identification of the mechanism(s) using biochemical and molecular methods.